Elytra, Tokyo, **33** (1): 61–68, May 30, 2005

Additional Revision of the Tribe Chilocorini (Coleoptera, Coccinellidae) of Japan

Hiroyuki Sasaji

Kawakami, Maruoka-chô, Fukui Pref., 910–0206 Japan

Abstract The tribe Chilocorini of Coccinellidae of Japan is revised and a new genus *Chujochilus* for *Arawana isensis* and a new species *Chilocorus chujoi* are described. *Chilocorus mikado* Lewis is transferred to *Phaenochilus* Weise.

In 1959, I published a revisional paper of the tribe Chilocorini of Coccinellidae in Japan. After that, *Arawana isensis* (H. Kamiya, 1966) and *Brumoides ohtai* Miyatake, 1970 of the Chilocorini were added to the Japanese fauna (Miyatake, 1970). Recently, Kovář (1997) published an excellent paper on the Palaearctic genera of Chilocorini. He pointed out that "*Arawana isensis*" would be separable from Nearctic *Arawana* species at the generic level, without nomenclatural treatment. I am going to describe a new genus for "*isensis*". As a result of close re-examination, I concluded that *Chilocorus mikado* Lewis, 1896 is referable to the genus *Phaenochilus* Weise, 1895. I am going to describe another new Japanese ladybird species on this occasion.

Before going further, I wish to express my deep thanks to Dr. I. Kovář, Czech National Museum in Praha for his valuable opinion. I also extend my cordial thanks to Dr. S. Azuma, Mr. K. Kido, Mr. I. Ohtsuka and Mr. Y. Tomishima for their contributions of useful materials.

Finally, I wish to dedicate the present paper to the late Prof. Dr. Michio Chûjô, the greatest coleopterologist in Japan.

Genus *Chujochilus* Sasaji, gen. nov.

Type species: *Arawana isensis* (H. Kamiya, 1966).

Body nearly semispherical, dorsum strongly convex and glabrous. Antennae (Fig. B) slender, ten-segmented. Apical segment of maxillary palpus twice as long as wide, slightly narrowing apically. Labial palpus (Fig. D) very slender. Frons very wide, clypeus short (Fig. A). Elytral epimeron (Fig. L) very wide, strongly inclined, with a deep groove for the reception of distal end of femur. Femoral line of first abdominal sternite (Fig. I) hock-shaped, running obliquely from the side of metacoxal process towards the posterior margin. Abdomen with five visible segments in both sexes. Femur with a deep groove. Tarsal claws strongly curved, with large teeth (Figs. G, H). Male genitalia (Fig. 2): tegmen slender, with slender lateral lobes; sipho strongly curved. Female genitalia as shown in Fig. 1 J–K.

Remarks. The present new genus is closely related to the Nearctic genus *Arawana* LENG, 1908, but is distinguishable from the latter by nine-segmented antenna, very broad epipleuron with deep groove for the reception of tip of femora, and lacking of the finger-like process of lateral lobes of tegmen.

Etymology. *Chûjô*, the greatest coleopterologist of Japan, Prof. Michio CHÛJÔ+*chilus* (chin in greek).

Chujochilus isensis (H. KAMIYA, 1966), comb. nov.

[Japanese name: Ise-tentô]

(Figs. 1 & 2)

Exochomus isensis H. KAMIYA, 1966, 80 (Ise, Mie Pref., Honshu).
Arawana isensis: SASAJI, 1971, 230–232, pl.11.

General coloration pale yellowish brown, vertex and upper half of frons blackish brown, ocular margin of clypeus narrowly darkened.

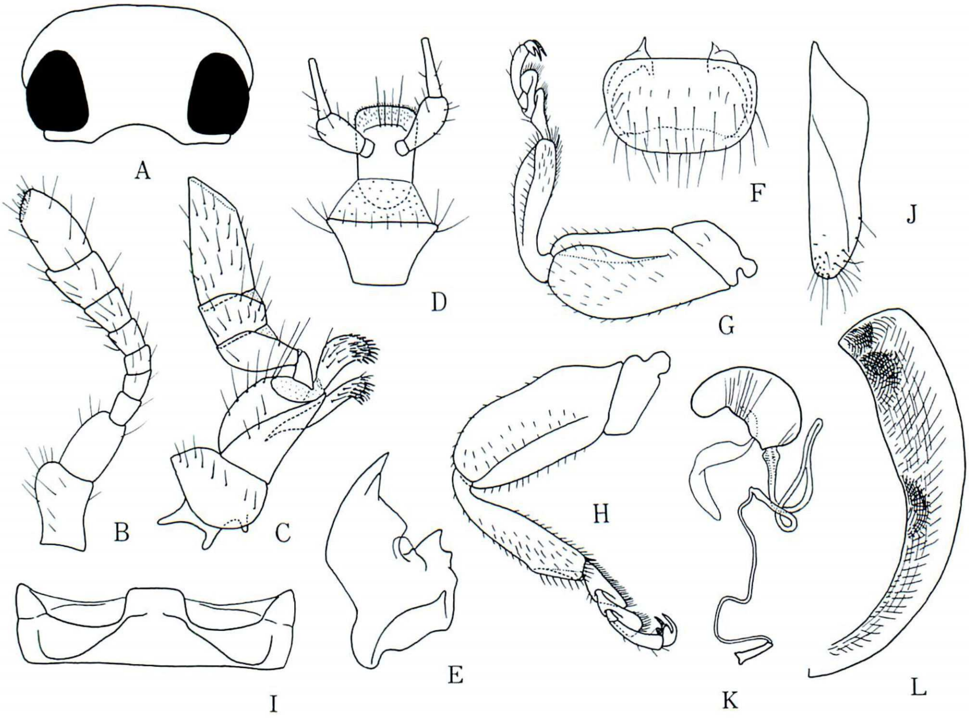

Fig. 1. *Chujochilus* (gen. nov.) *isensis* (H. KAMIYA, 1966). —— A, Head capsule, frontal view; B, antenna; C, maxilla; D, labium; E, mandible; F, labrum; G, front legs; H, hind leg; I, first abdominal sternum; J, hemisternite; K, female internal genital organ; L, elytral epipleuron.

Head distinctly broader than half of pronotum; eyes large, inner ocular margins straight and strongly convergent apically, interocular distance about four-ninths as wide as head. Antennae and mouth parts as figured (Fig. 1). Pronotum rather small, about five-ninths as wide as body, strongly descending anteriorly. Scutellum very small pentagonal, about 1/15 as wide as pronotum. Hypomera of prothorax roundly foveate near anterior inner corners. Prosternum without carina.

Dorsal habitus as illustrated in colour in SASAJI (1971).

Body length: 3.60–3.80 mm; width: 3.40–3.70 mm; depth; 1.75–2.00 mm.

Specimens examined. Mt. Takakura, Mie Pref., 29–V–1958, H. ICHIHASHI leg, in coll. Kyushu Univ. (holotype, ♀); 3♂♂, 3♀♀, Taraki-chô, Kuma-gun, Kumamoto Pref., 20–II–1995, Y. TOMISHIMA leg.; 2♂♂, Kamimura, Shiragami-dake, Kumamoto Pref., Y. TOMISHIMA leg.

Distribution. Japan (Honshu, Kyushu).

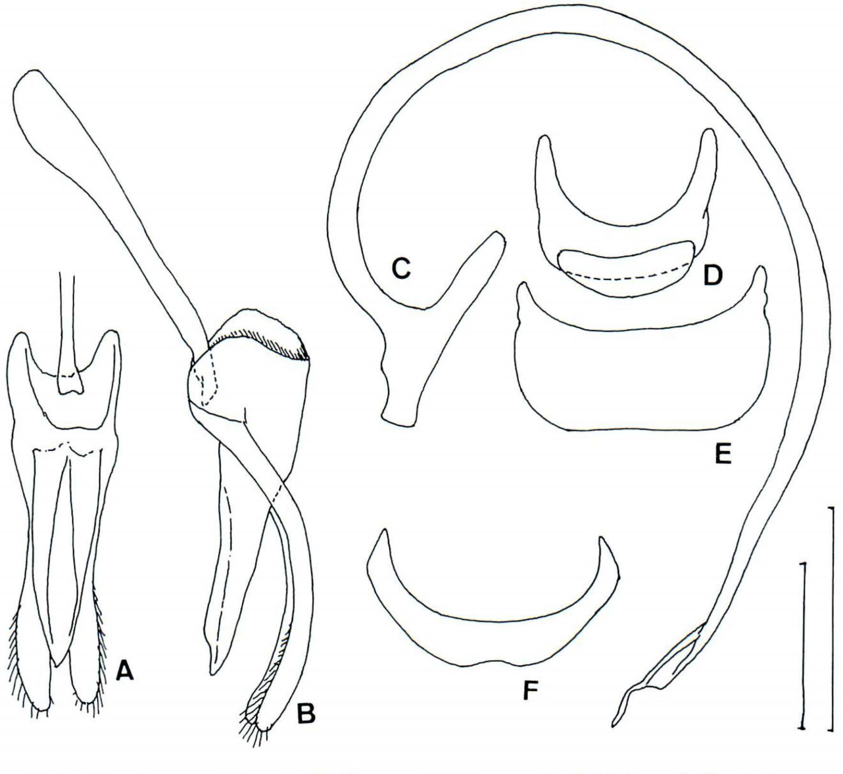

Fig. 2. *Chujochilus* (gen. nov.) *isensis* (H. KAMIYA, 1966). —— A–C, Male genitalia; A, tegmen, ventral view; B, tegmen, lateral view; C, sipho, lateral view; D, 9th and 10th abdominal tergites; E, 8th abdominal tergites; F, 8th (visible 6th) sternite. Scale: 0.5 mm, longer one applied to A–C, shorter one to the remains.

Phaenochilus mikado (LEWIS, 1896), comb. nov.

[Japanese name: Mikado-tentô]

(Fig. 3)

Chilocorus mikado LEWIS, 1896, 32 (type locality: Nagasaki); KAMIYA, 1959, 101; KAMIYA, 1966, 77; SASAJI, 1971, 225, pl. 10.

Chilocorus nigritus LEWIS, 1873 (nec FABRICIUS, 1798), 56 (Nagasaki), (nomen nudum).

Coloration: Male. Head including antennae and mouth parts yellowish orange. Pronotum black, lateral margins narrowly yellowish orange and border between black and orange obscure. Female nearly as male. Scutellum and elytra entirely black. Underside of body and legs uniformly yellowish orange.

Apical segment of maxillary palpus cylindrical, three times as long as wide, slightly narrowing apically. Labial palpus very slender, apical segment four times as long as wide. Lateral sides of pronotum nearly straight with obtusely rounded anterior corner and rectangularly rounded posterior corners. Scutellum elongate triangular. Front tibia strongly angulate at basal one-fourth, without tibial spurs. Hind tibiae distinctly angulate at basal two-fifths, with minute tibial spurs. Male genitalia — tegmen slender, median piece of tegmen very strongly asymmetrical, groove for the reception of sipho strongly biased towards visible right-side.

Body length: 3.37–4.10 mm; width: 3.10–3.90 mm; depth: 1.75–2.10 mm.

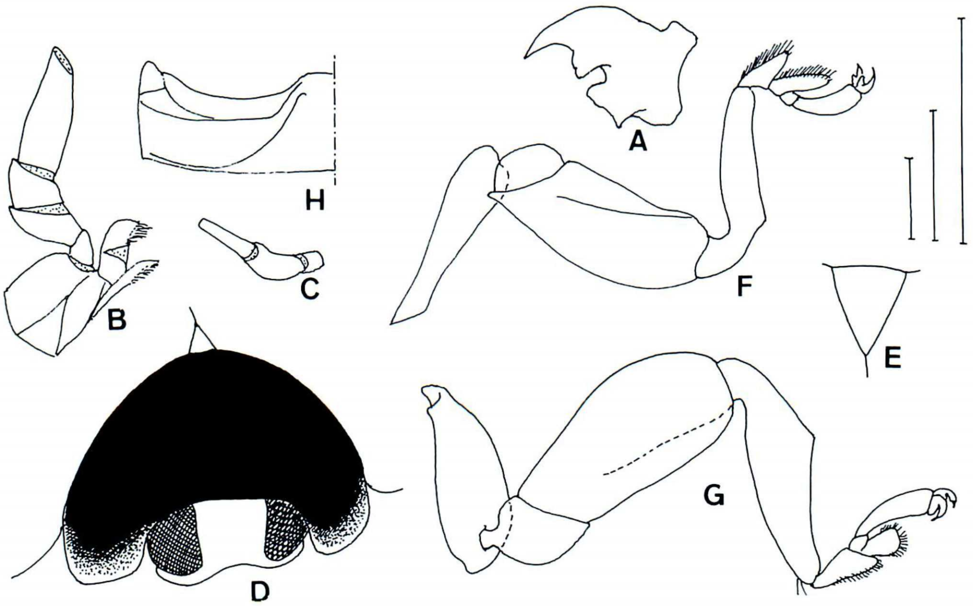

Fig. 3. *Phaenochilus mikado* (LEWIS, 1896). —— A, Mandible; B, maxilla; C, labial palpus; D, male pronotum and head, dorso-frontal view; E, scutellum; F, front leg; G, hind leg; H, first abdominal sternite. Scale: 0.5 mm; shorter one applied to D; middle one to F and G; longer one to the remains.

Specimens examined. 6 exs., Takachihono-mine, Miyazaki Pref., in the collection of the Kyushu University; 30 exs., Kyuryu-jinja, Nakagawa-chô, Fukuoka Pref., 25–X–1998, K. KIDO leg.; 2♂♂, 3♀♀, Mt. Ichifusa, Mizukami-mura, Kumamoto Pref., 21–I–1998, Y. TOMISHIMA leg.

Distribution. Japan (Kyushu).

Remarks. *Chilocorus mikado* was originally described by LEWIS (1896) from Nagasaki in Japan, and redescribed by SASAJI (=H. KAMIYA) (1959, 1966, 1971). After a close examination of specimens, I concluded that the chilocorine-species with almost entirely black dorsal surface from Japan proper is not referable to the genus *Chilocorus* LEACH, 1815 (s. str.) but to the genus *Phaenochilus* WEISE, 1895.

Chilocorus chujoi sp. nov.

[Japanese name: Chûjô-tentô]

(Figs. 4, 5)

Coloration: Male. Head including antennae and mouth parts yellowish orange, except for blackish brown apical part of mandible. Pronotum black, with lateral areas yellowish orange. Elytra and scutellum black without any reddish markings; inner areas of elytral epipleura yellowish brown. Ventral side entirely yellowish orange. Female. Head usually entirely yellowish orange, but sometimes posterior area is darkened. Pronotum black, lateral parts of external margins narrowly yellowish orange.

Body nearly hemispherical, slightly longer than wide. Eyes very large, interocular distance about one-third of head width. Inner ocular margins of frons slightly narrowing apically; frons longitudinally furrowed. Anterior margin of clypeus relatively strongly bisinuate and narrowly marginate. Antenna extremely short, eight-segmented; basal segment much longer than wide; second segment somewhat shorter than basal; each of third to seventh shorter than long; eighth (terminal) segment distinctly longer than the preceding. Tip of mandible sharply pointed. Terminal segment of maxillary palpus nearly parallel-sided, about twice as long as wide, and terminal side obliquely truncate. Terminal segment of labial palpus about three times as long as wide, cylindrical with a rounded tip.

Pronotum very wide, lateral sides gently rounded and finely marginate. Surface of pronotal disc shining, extremely finely and rather sparsely punctate. Scutellum nearly regularly triangular, slightly longer than wide.

Elytra both combined as wide as long; elytral circumference more strongly and sparsely punctate than in pronotum.

Legs relatively stout. Front femur deeply grooved at apical three-fourths; front tibia bent at base and very strongly grooved at apical two-thirds and without apical spur. Middle and hind tibiae with minute but distinct apical spurs.

Femoral line of the first abdominal sternum incomplete, its outer portion directed

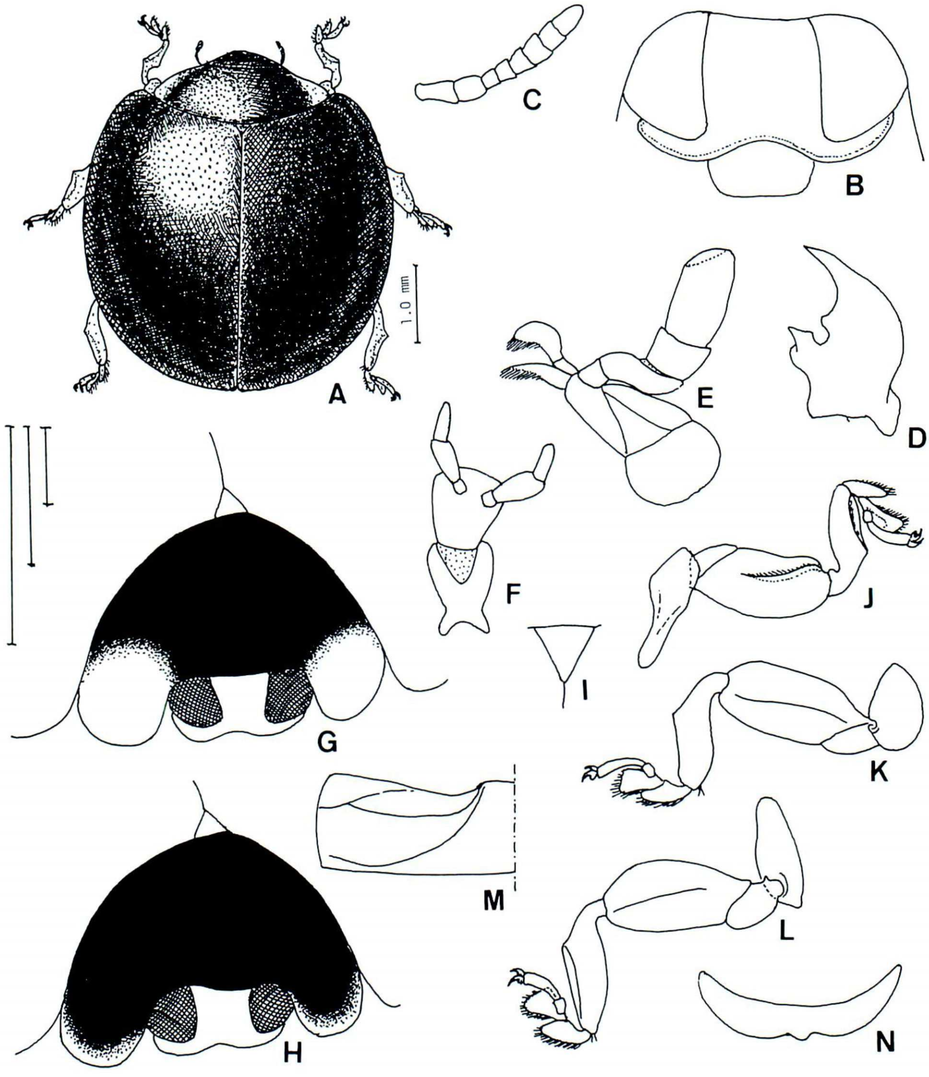

Fig. 4. *Chilocorus chujoi* sp. nov. —— A, Dorsal habitus; B, head, frontal view; C, antenna; D, left mandible; E, maxilla; F, labium; G, male pronotum and head, dorso-frontal view; H, female pronotum and head; I, scutellum; J, front leg; K, middle leg; L, hind leg; M, first abdominal sternite; N, 8th (visible 6th) sternite. Scales: 0.5 mm (except 1.0 mm); middle one applied to B; longer one to C–F; shorter one to the remains.

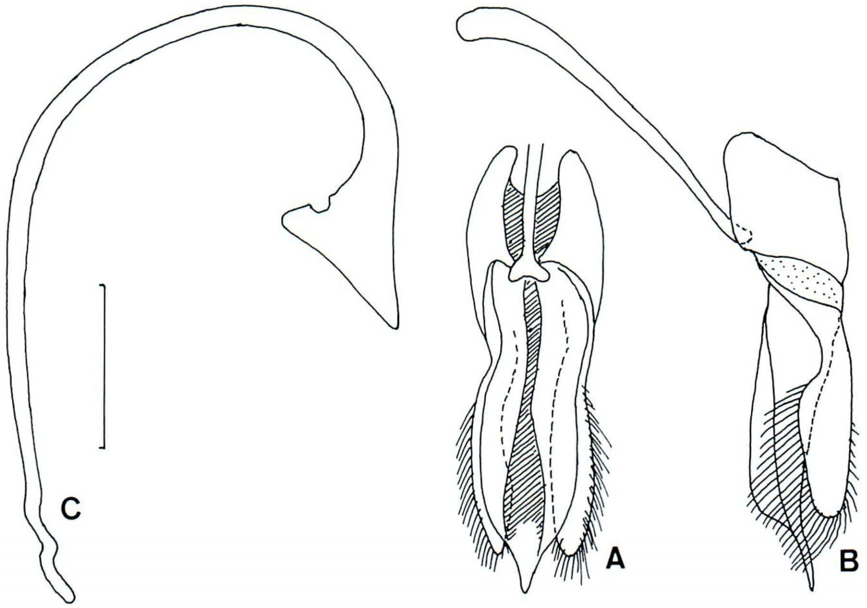

Fig. 5. Male genitalia of *Chilocorus chujoi* sp. nov. —— A, Tegmen, ventral view; B, tegmen, lateral view; C, sipho, lateral view. Scale: 0.5mm.

laterad. Posterior margin of eighth (visible sixth) abdominal sternum of male concave with a pointed projection at middle.

Male genitalia (Fig. 5) — Sipho semicircular, apex weakly bisinuate; siphonal capsule triangular. Tegmen almost symmetrical. Median piece of tegmen distinctly longer than lateral lobes, and tip of median piece strongly pointed. Lateral lobes strongly clavate in lateral view.

Body length: 3.50–4.10 (4.19) mm; width: 3.45–3.90 (3.90) mm; depth: 1.95–2.05 (2.05) mm. Measurements of the holotype are in the parentheses.

Holotype (♂): Urasoe, Okinawa Is., the Ryukyus, 25–X–2003, S. AZUMA leg., preserved in the collection of the Kyushu University Museum, Fukuoka.

Allotype (♀): the same data as the holotype. Paratypes: 6♂♂, 5♀♀, the same data as the holotye; 1♂, 1♀, 10–IX–2003, S. AZUMA leg.

Distribution. Ryukyus (Okinawa Is.).

Remarks. The present new species is closely related to the preceding species in external features, but the pronotum of the male is widely pale, apical segment of the maxillary palpus is thick and tegmen of the male genitalia is nearly symmetrical.

Etymology. The specific name is dedicated to the late Prof. Michio CHÛJÔ.

要約

佐々治寛之：日本産クチビルテントウ族の追加再検討．—— 日本産クチビルテントウ族のテントウムシ科を再検討した結果，イセテントウ*Arawana isensis*に対して*Chujochilus*の新属を設定し，また琉球産の1種に新種*Chilocorus chujoi*を記載した．ミカドテントウ*Chilocorus mikado* Lewisは，系統的位置を再検討して*Phaenochilus*属に移した．本報と新属および新種は，日本の甲虫研究に多大の業績をもたらした故中條道夫博士に奉献するものである．

References

Chapin, E. A., 1965. The genera of the Chilocorini (Coleoptera, Coccinellidae). *Bull. Mus. comp. Zool., Harvard Univ.*, **133**: 227–271.

Kamiya, H., 1959. A revision of the tribe Chilocorini of Japan and the Loochoos (Coleoptera: Coccinellidae). *Kontyû, Tokyo*, **27**: 99–105, pl. 9.

——— 1966. On the Coccinellidae attacking the scale insects and mites in Japan and the Ryukyus. *Mushi, Fukuoka*, **39**: 69–95.

Kovář, I., 1997. Revision of the genera *Brumus* Muls. and *Exochomus* Redtnb. (Coleoptera, Coccinellidae) of the Palaearctic Region. Part I. *Acta ent. Mus. natn., Pragae*, **1997**: 71–124.

Lewis, G., 1896. On the Coccinellidae of Japan. *Ann. Mag. nat. Hist., London*, (6), **17**: 22–41.

Miyatake, M., 1970. The East-Asian Coccinellid-beetles preserved in the California Academy of Sciences, tribe Chilocorini. *Mem. Coll. Agric., Ehime Univ.*, **14**: 303–340.

Sasaji, H., 1971. Fauna Japonica: Coccinellidae (Insecta: Coleopt.). 340 pp+16 col. pls. Academic Press of Japan.